

Col. Clarendon
APB

The Municipality of George Town

Penang

STRAITS SETTLEMENTS.



HEALTH OFFICER'S
ANNUAL REPORT

For the Year 1923.

[Rose (J. Sturt)] Municipal
Health Officer.

Price 50 cents per copy.

OBTAINABLE FROM THE MUNICIPAL SECRETARY.

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PENANG:

1924.



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STATISTICAL SUMMARY.

Situation	Lat. 5° 24' N. Long. 100° 1' E.
Average Elevation above L.W.M.O.S.T.	..				<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> Town area 12 ft. 6 ins. Country area 25 ft. 0 in. </div> </div>
O. S. Tides rise and fall	..	..			9 ft. 0 in.
Rainfall 1923 (average of three readings within Municipal Limits)	..	..			127.14 inches.
Mean Temperature 1923	..	..			81.9°F.
Maximum do.	..	..	..		90.2°F.
Minimum do.	..	..	..		71.6°F.
Total area of Penang Island	..	..			108 sq. miles.
Area within Municipal Limits	..	..			9.4 sq. miles or 5803 acres.
Estimated population (mid-year)			..		128,300.
Density of population	..	..	..		<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> 13,649 per sq. mile. 22.1 per acre. </div> </div>
Crude Death Rate	..	..	..		29.62 per mille.
Infant Mortality	..	..	..		155. <i>figure falling</i>
Birth Rate	..	..	..		31.39 per mille.
Sterling equivalent of \$1/-	..	..	..		2s. 4d. (approximately).

very satisfactory (1906 380)
2 whole time & 8 part time
nurses employed

STAFF OF THE HEALTH DEPARTMENT ON 31st DECEMBER, 1923.

J. STUART ROSE	..	M.B., D.P.H.			
		Health Officer,			
		Registrar of Births and Deaths,			
		Deputy Superintendent of Vaccination,			
		Registrar of Midwives,			
		Medical Superintendent of Infectious Diseases Hospital,			
		Medical Superintendent of Chinese Small-pox Hospital.			
G. S. GLASS	..	B.A., M.B., D.P.H., D.T.M. and H.			
		Deputy Health Officer,			
		Deputy Registrar of Births and Deaths,			
		Deputy Superintendent of Vaccination,			
KHOO TIANG PHEAN	..	M.B., B.S. (Hong Kong)			
		Deputy Registrar of Deaths.			
W. A. WARD	..	Chief Sanitary Inspector, joined the service	1st January	1893	
A. A. JEREMIAH	..	Sanitary Inspector, joined the service	1st January	1904	
J. S. REUTENS	..	do.	do.	1st January	1905
H. L. McCULLOCH	..	do.	do.	1st January	1912
R. J. RANGEL	..	Sanitary Sub-Inspector	do.	1st October	1913
B. B. PETERS	..	do.	do.	1st May	1918
G. MARTINEZ	..	do.	do.	1st Nov.	1918
M. D'SOUZA	..	do.	do.	1st April	1919
J. LOH	..	do.	do.	17th May	1921
OW LEONG CHYE	..	do.	do.	1st July	1921
E. V. LESSLER	..	do.	do.	1st July	1921
V. E. ROZELLS	..	do.	do.	1st Sept.	1921
LIM THEAN SOO	..	do.	do.	1st Sept.	1921
F. A. SCULLY	..	do.	do.	1st May	1922
LIM CHOON HOCK	..	do.	do.	1st August	1922
YEAP HIN TAT	..	do.	do.	14th August	1922
LIM KHAY SENG	..	do.	do.	1st March	1923
LO SIEW TEAN	..	do.	do.	1st July	1923
TEOH CHENG HOE	..	do.	do.	1st Dec.	1923
MISS J. A. G. RONALD	..	District Nurse	do.	9th January	1923
MISS C. M. GOLD	..	do.	do.	9th April	1923
Eight Qualified Chinese Midwives as part time District Nurses.					

MUNICIPAL HEALTH OFFICE,
PENANG, 15TH FEBRUARY, 1924.

To,
THE MUNICIPAL COMMISSIONERS,

GENTLEMEN,

I have the honour to submit the following report on the health of the Municipality during 1923.

Population.

1. The estimated population was 128,300 divided among the various nationalities as follows:—

Table I.

Nationality.				Males.	Females.	Total.
European	...	...	...	662	393	1,055
Eurasian	...	...	...	692	822	1,514
Chinese	...	...	...	52,582	34,484	87,066
Malay	...	...	...	8,615	8,733	17,348
Indian	...	...	...	15,490	4,506	19,996
Others	...	...	...	751	570	1,321
				78,792	49,508	128,300

Births.

2. There were 4028 births registered of whom 2065 were males and 1963 females, the birth rate being 31.39 per thousand. The figures for 1922 were, births 3738 and birth rate 29.71.

Reckoned on the estimated female population alone the birth rate was 81.36 per thousand compared to 77.71 per thousand in 1922.

The number of births and the birth rates for the various nationalities were as follows:—

Table II.

Nationality.		NUMBER OF BIRTHS.			BIRTH RATE PER THOUSAND.	
		Males.	Females.	Total.	Total population.	Female population.
European	...	31	28	59	55.92	150.13
Eurasian	...	18	35	53	35.01	64.23
Chinese	...	1,459	1,359	2,818	32.38	81.13
Malay	...	289	281	573	33.03	65.61
Indian	...	256	243	499	24.95	110.74
Others	...	12	14	26	19.68	45.61

During the previous ten years the births registered were:—

Table III.

Year.	European.	Eurasian.	Chinese.	Malay.	Indian.	Others.	Total.
1913	29	40	1,492	398	423	82	2,464
1914	27	57	1,575	368	445	72	2,545
1915	46	38	1,774	478	402	78	2,808
1916	34	47	1,785	362	390	90	2,708
1917	39	44	2,010	463	472	71	3,099
1918	57	53	2,008	403	381	38	2,940
1919	41	51	2,134	481	467	29	3,203
1920	46	43	2,250	468	464	50	3,321
1921	48	71	2,623	557	437	32	3,768
1922	54	53	2,655	534	404	38	3,738
Average for ten years.	42	49	2,030	451	428	58	3,059
1923	59	53	2,818	573	499	26	4,028

Records from all named nationalities are higher than the averages for previous ten years and all nationalities except Eurasian give an increase on 1922 record.

A comparison of the births and deaths in the different nationalities may be of interest:—

Table IV.

Nationality.	Births.	Birth rate per thousand.	Deaths.	Death rate per thousand
European ...	59	55.92	9	8.53
Eurasian ...	53	35.01	31	20.48
Chinese ...	2,818	32.37	2066	23.73
Malay ...	573	33.03	467	26.92
Indian ...	499	24.95	573	28.66
Others ...	26	19.68	37	28.01

Deaths.

3. The gross total of deaths within Municipal Limits during the year was 3801 and the crude death rate 29.62; of this number 618 were not normally resident in Penang and had been less than three months within Municipal Limits. Omitting these, we have 3183 deaths and a corrected death rate of 24.81 per thousand.

The following table shows the distribution of the deaths in age groups and nationalities :—

Table V.

Nationality.	Sex.	A G E S .											Total.	Grand Total.
		Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 to 75 years.	Over 75 years.	Unknown.		
European	M.	1	...	...	...	1	1	2	...	...	...	...	5	9
	F.	...	...	...	...	...	1	1	...	1	1	...	4	
Eurasian	M.	4	1	2	...	1	...	4	3	2	1	...	18	31
	F.	1	...	...	2	1	...	1	5	3	...	...	13	
Chinese	M.	234	93	36	64	169	256	235	143	64	21	23	1,338	2066
	F.	184	95	50	53	69	75	67	48	46	36	5	728	
Malay	M.	60	23	10	9	24	24	22	10	12	24	...	218	467
	F.	40	30	16	22	34	20	20	19	23	25	...	249	
Indian	M.	59	15	13	43	71	82	38	31	14	10	7	383	573
	F.	40	29	8	15	32	19	12	15	7	11	2	190	
Other Nationalities	M.	2	2	...	...	5	3	2	1	1	1	...	17	35
	F.	1	...	...	1	2	4	2	2	2	4	...	18	
Unknown	M.	...	...	...	...	...	...	...	...	...	...	...	...	2
	F.	...	...	...	...	...	...	...	...	...	...	2	2	
Total	M.	360	134	61	116	271	366	303	188	93	57	30	1,979	3183
	F.	266	154	74	93	138	119	103	89	82	77	9	1,204	
Grand Total		626	288	135	209	409	485	406	277	175	134	39	3,183	

Compared with 1922 the Chinese deaths are less by 64, while the Indian deaths have increased by 29.

The total deaths of each nationality in the last ten years is shown here.

Table VI.

Year.	European.	Eurasian.	Chinese.	Malay.	Indian.	Others.
1914	10	35	2,260	506	715	48
1915	8	36	2,087	473	565	37
1916	11	35	2,119	436	527	33
1917	11	36	2,484	549	688	59
1918	9	26	2,930	479	927	56
1919	13	34	2,539	528	872	38
1920	11	44	2,398	382	676	42
1921	10	26	2,213	394	629	41
1922	12	34	2,130	464	544	46
1923	9	31	2,066	467	573	35

Infant Mortality.

4. The infant mortality was 155 per thousand births, being the lowest rate recorded for the Municipality. In 1921 and 1922 the rates were 167 and 166, and the average for the preceding ten years is 231.

A chart is inserted which shows clearly the great and encouraging decline in our infant mortality during the last twenty years.

Figures such as those shown are most valuable if they lead the general public to the conviction that money spent on sanitation in all aspects is well invested and produces good results.

The money spent on District Nursing, however, does not give the best possible results: the time allowed for registration of a birth is fourteen days: a baby is frequently moribund or dead before its birth is reported: in these ways the work of our district nurses and midwives is seriously handicapped.

A death here must be reported within 12 hours and I can see no reason why a birth should not be notified within 36 hours as in Great Britain and Ireland.

Of the 626 infants who died in 1923, there were 238 under one month of age, 138 between one and three months and 250 between three and twelve months.

Appended is Table VII showing the infant mortality in the various nationalities and a comparison with 1922.

Table VII.

Nationality.			Births	Deaths under one year.	Infants deaths per thousand births.	
					1923	1922
European	...	...	59	1	17	37
Eurasian	...	...	53	5	94	132
Chinese	...	...	2818	418	148	157
Malay	...	...	573	100	174	189
Indian	...	...	499	99	198	228
Others	...	...	26	3	115	79
TOTAL			4028	626	155	166

The chief causes of infant deaths and the mortality compared with that in previous years from the same causes are given in Table VIII.

Table VIII.

Infant deaths per thousand births.										
	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
Tetanus	49	56	40	40	30	39	34	22	2	8
Intestinal diseases	62	60	63	68	61	71	54	38	36	37
Respiratory diseases	44	36	51	53	54	46	41	31	24	27
Prematurity & Debility	66	46	50	57	46	48	47	32	15	26
Convulsions	7	11	12	13	12	9	9	24	59	23

These cases accounted for 496 of the 626 infant deaths which occurred.

34 infants were certified as having died from tetanus and 96 were returned as having died from convulsions: the corresponding figures for 1922 are 11 and 220.

Table VIII is unreliable, the only returns that may be used with any exactitude as comparative figures are those given in Table VII.

Table IX is given to show a comparison between births, infant mortality, and general death rate for the preceding ten years and for 1923.

Table IX.

Year.	Estimated Population.	BIRTHS		DEATHS UNDER 1 YEAR.		DEATHS AT ALL AGES.	
		Total.	Rate per thousand population.	Total.	Rate per thousand births.	Total.	Rate per thousand population.
1913	102,912	2,464	23.95	703	284	3,595	34.93
1914	103,664	2,545	24.55	664	260	3,577	34.50
1915	104,420	2,808	26.89	671	239	3,206	30.70
1916	105,183	2,708	25.75	692	255	3,162	30.00
1917	105,950	3,099	29.25	831	269	3,831	36.16
1918	106,723	2,940	27.55	673	229	4,430	41.50
1919	107,502	3,203	28.86	782	244	4,024	37.43
1920	108,286	3,321	30.67	681	205	3,554	32.82
1921	123,300	3,768	30.56	631	167	3,313	26.87
1922	125,834	3,738	29.71	622	166	3,230	25.67
Average for the preceding ten years.	109,377	3,059	27.77	695	231	3,592	34.01
1923	128,300	4,028	31.39	626	155	3,183	24.81

Cause of Death.

5. Table X shows the age, sex and cause of death certified; 1302 of the certificates were from Hospitals or private practitioners, 67 from the Coroner, and 1814 from the Deputy Registrar of Deaths.

In other words less than half of the cases were under medical attention before death. As the number of post-mortem examinations made was so small as to be negligible, the diagnoses here tabulated must be accepted with reserve.

PENANG MUNICIPALITY

INFANT MORTALITY

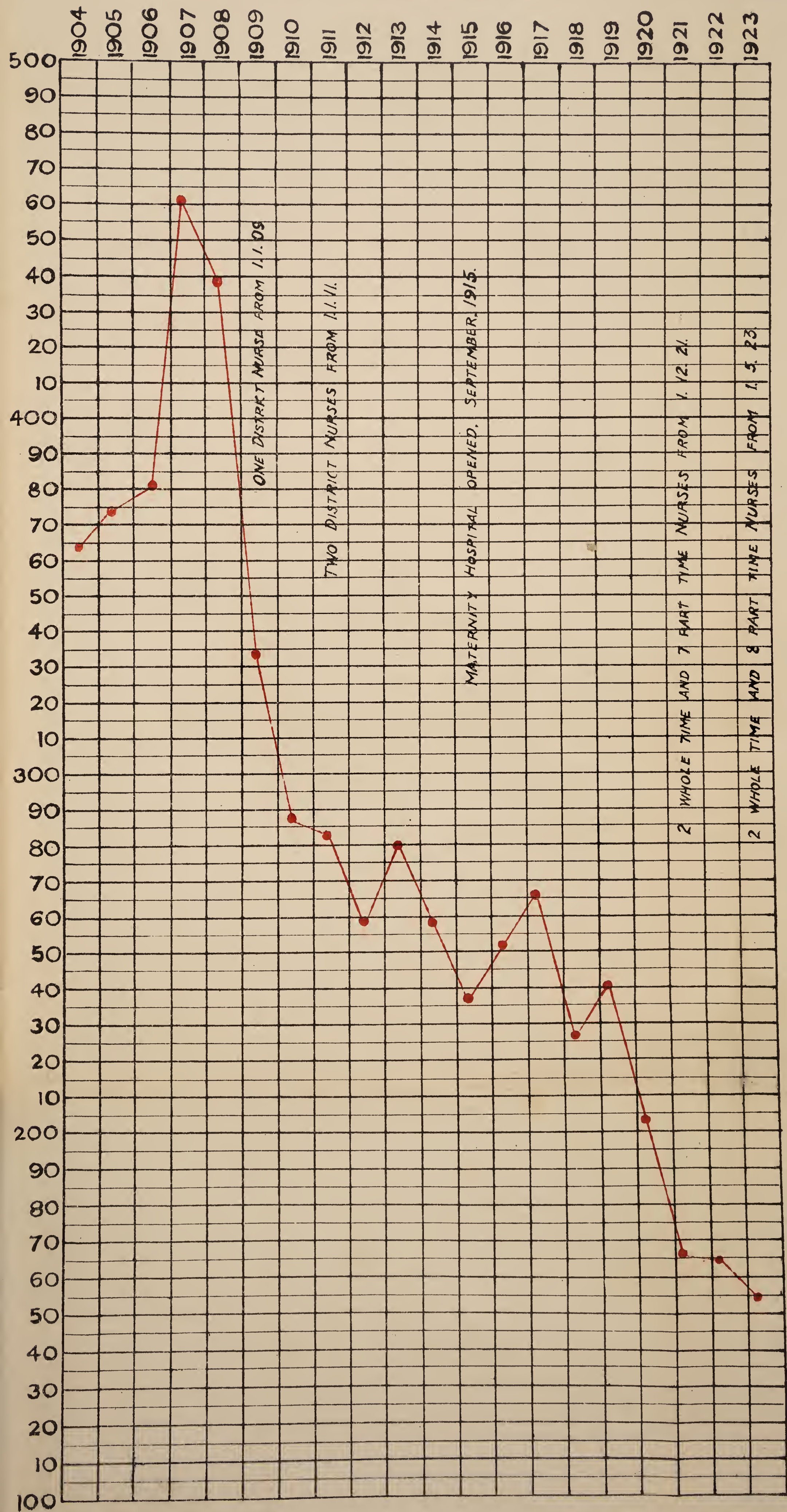


Table X.

Deaths from	Sex.	Ages.											Total.	Grand Total.
		Under 1 year	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 to 75 years.	Over 75 years.	Unknown.		
Specific Febrile on Zymotic diseases.														
Enteric Fever...	{ M. F.	... ...	... ...	... ...	3 1	2 ...	1 ...	1 ...	... ...	... ...	... ...	... ...	7 1	8
Diarrhoea ...	{ M. F.	49 32	18 23	4 4	1 1	6 4	5 2	9 ...	4 3	1 ...	... ...	... ...	97 69	166
Dysentery ...	{ M. F.	1 ...	3 1	... 1	7 1	16 4	17 1	12 1	3 3	1 ...	1 2	... ...	61 14	75
Remittent fever	{ M. F.	... ...	1 1	1 ...	... ...	... ...	1 ...	... ...	... ...	... ...	... ...	... ...	3 1	4
Unspecified fever ...	{ M. F.	39 38	34 53	18 26	35 20	53 28	61 17	42 24	23 5	4 4	... ...	... ...	309 215	524
Syphilis ..	{ M. F.	1 2	2 ...	... ...	... ...	5 1	10 3	9 ...	3 ...	2 ...	... ...	... ...	32 6	38
Puerperal fever	{ M. F.	... ...	... ...	... ...	... 4	... 9	... 2	... ...	... ...	... ...	... ...	... ...	... 15	15
Other Septic disease ...	{ M. F.	7 6	3 3	1 5	5 3	6 2	19 3	13 2	8 3	3 ...	... ...	... ...	65 27	92
Phthisis ...	{ M. F.	... ...	1 1	4 4	18 27	71 31	108 38	76 24	23 9	8 4	3 1	3 ...	315 139	454
Other Tubercular Diseases ...	{ M. F.	1 1	3 1	9 2	1 3	3 1	6 1	... ...	... 1	... ...	... ...	... ...	23 10	33
Leprosy ...	{ M. F.	... ...	... ...	... ...	... 1	... 2	... 3	... 1	... 1	... ...	... ...	... ...	... 8	8
Tetanus ...	{ M. F.	16 18	... ...	1 1	... ...	1 ...	... 1	1 ...	... ...	... ...	... ...	... ...	19 20	39
Influenza ...	{ M. F.	1 ...	3 2	1 ...	1 ...	3 1	1 1	1 1	1 3	1 1	... 1	... ...	13 10	23
Diphtheria ...	{ M. F.	... ...	2 1	1 ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	3 1	4
Cerebro-Spinal Meningitis ...	{ M. F.	... ...	... ...	1 ...	... ...	... ...	... ...	1 ...	1 ...	... ...	... ...	... ...	3 ...	3
Whooping Cough ...	{ M. F.	1 ...	1 1	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	2 1	3
Measles ...	{ M. F.	2 1	1 1	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	3 2	5
Total to carry forward ...	{ M. F.	118 98	72 88	41 43	71 61	166 83	229 72	165 53	66 28	20 9	4 4	3 ...	955 539	1494

Deaths from	Sex.	Ages.											Total.	Grand Total.
		Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 to 75 years.	Over 75 year.	Unknown.		
Brought forward ...	{ M. F.	118 98	72 88	41 43	71 61	166 83	229 72	165 53	66 28	20 9	4 4	3 ...	955 539	1494
Parasitic Diseases														
Malaria ...	{ M. F.	3 1	4 1	3 2	8 5	28 8	16 4	8 2	5 2	1 ...	...	...	76 25	101
Malaria Cachexia ...	{ M. F.	...	...	...	1 ...	...	...	...	...	...	...	...	1 ...	1
Worms ...	{ M. F.	1 1	5 8	1 6	2 1	2 1	2 ...	2 ...	...	...	...	...	15 17	32
Constitutional Diseases														
Rheumatism ...	{ M. F.	...	...	...	...	...	...	1 ..	...	...	...	...	1 3	4
Cancer ...	{ M. F.	...	...	...	...	2 2	6 1	8 6	5 3	3 1	...	...	24 14	38
Anaemia ...	{ M. F.	...	...	...	...	1 ...	4 ...	1 1	...	...	...	...	6 3	9
Beri-beri ...	{ M. F.	...	...	1 ...	...	6 4	3 4	5 3	4 ...	...	...	...	19 11	30
Developmental diseases.														
Premature birth	{ M. F.	31 17	...	...	...	...	...	...	...	...	...	...	31 17	48
Old age ...	{ M. F.	...	...	...	...	...	...	5 4	34 28	43 49	49 62	...	131 143	274
Local diseases.														
Convulsions ...	{ M. F.	46 50	5 4	...	...	...	...	...	...	...	...	...	51 55	106
Other diseases of Nervous System	{ M. F.	4 6	...	1 ...	1 1	2 2	4 2	5 1	...	...	...	1 ...	18 12	30
Organs of special sense ...	{ M. F.	...	...	...	...	...	...	...	...	...	...	...	...	2
Circulatory system ...	{ M. F.	4 2	2 2	1 3	9 3	9 5	26 13	39 13	20 7	16 11	3 2	6 3	135 64	199
Total to carry forward ...	{ M. F.	207 177	88 104	48 57	92 71	216 106	290 97	239 83	134 68	83 71	56 68	10 3	1463 905	2368

Deaths from	Sex.	Ages.											Total.	Grand Total.
		Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 to 75 years.	over 75 years.	Unknown.		
Brought forward ...	{ M. F.	207 177	88 104	48 57	92 71	216 106	290 97	239 83	134 68	83 71	56 68	10 3	1463 905	2368
Bronchitis ...	{ M. F.	28 14	7 12	1 3	... ...	... 3	2 ...	12 3	13 5	4 2	... 3	... ...	67 45	112
Pneumonia ...	{ M. F.	31 13	26 20	6 7	9 6	17 12	30 4	20 2	11 3	1 ...	1 ...	3 ...	155 67	222
Other diseases of respiratory system ...	{ M. F.	13 11	7 3	1 3	7 1	16 2	12 1	8 ...	3 ...	1 1	... 2	3 ...	71 24	95
Enteritis ...	{ M. F.	31 23	4 11	2 2	4 3	3 ...	5 2	3 1	1 ...	... 2	... ...	... ...	53 44	97
Diseases of liver	{ M. F.	2 1	... ...	... ...	... ..	2 ...	11 1	6 1	7 2	... 1	... ...	... ...	28 6	34
Other diseases of digestive system ...	{ M. F.	10 3	... 1	... 1	... 2	7 1	5 2	2 3	5 2	1 ...	... ...	... ...	30 15	45
Lymphatic system ...	{ M. F.	1 ...	... ...	... ...	... ...	... 1	... ...	... ...	... ...	... ...	... ...	... ...	1 1	2
Urinary system	{ M. F.	2 ...	1 2	1 1	1 2	5 3	6 3	6 5	8 4	1 1	... 2	... ...	31 23	54
Generative organs ...	{ M. F.	... ...	... ...	1 ...	... ...	... 2	... ...	... 2	... ...	1 ...	... ...	... ...	2 4	6
Child birth and abortion ...	F.	...	...	...	6	6	9	1	...	...	...	...	22	22
Bones and joints	{ M. F.	... ...	... ...	... ...	... 1	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... 1	1
Violence.														
Accident and negligence ...	{ M. F.	... ...	1 ...	1 ...	1 ...	1 1	... ...	2 ...	1 ...	... ...	... ...	4 2	11 3	14
Homicide, Suicide and Execution ...	{ M. F.	... ...	... ...	... ...	1 ...	1 1	3 ...	2 ...	... ...	... ...	... ...	7 2	14 3	17
Ill-Defined cases.														
Debility ...	{ M. F.	35 24	... 1	... ...	1 1	3 ...	1 ...	2 1	2 2	1 2	... 1	... ...	45 32	77
Unknown ...	{ M. F.	... ...	... ...	... ...	... ...	... ...	... ...	... ...	1 ...	... ...	... ...	3 2	4 2	6
Diabetes ...	{ M. F.	... ...	... ...	... ...	... ...	... ...	1 ...	1 1	2 3	... 2	... 1	... ...	4 7	11
Totals ...	{ M. F.	360 266	134 154	61 74	116 93	271 138	366 119	303 103	188 89	93 82	57 77	30 9	1979 1204	3183

A comparison between the numbers of deaths attributed to some of the principal causes in 1923 and in the preceding ten years is shown here.

Table XI.

...	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	Average for pre- ceding ten years	1923.
Phthisis ...	534	616	554	527	590	722	693	677	580	455	595	454
Pneumonia ...	212	205	163	203	220	559	243	235	220	266	253	222
Bronchitis ...	140	103	80	98	148	198	152	146	126	88	128	112
Malaria ...	500	469	421	473	455	478	606	505	420	134	446	101
Unspecified fever ...	214	297	258	184	239	323	68	20	116	504	222	524
Enteritis ...	200	213	202	213	266	257	318	265	186	73	221	97
Dysentery ...	137	128	163	134	147	130	188	138	115	108	130	75
Diarrhoea ...	117	80	35	20	29	30	49	23	115	147	65	166
Beri-Beri ...	253	256	195	182	323	262	238	143	102	71	206	30
Debility ...	124	115	81	104	147	95	153	143	103	44	111	77
Tetanus ...	158	136	167	118	133	199	133	120	91	14	127	39
Old Age ...	183	175	145	143	198	141	174	142	173	203	168	274
Small-pox ...	1	nil	8	41	7	16	142	18	2	nil	nil	nil

The distribution of the chief causes of death among the various nationalities is shown in Table XII.

Table XII.

Certified cause of Death.	European	Eurasian	Chinese	Malay	Indian	Others	Total
Diarrhoea	3	136	8	18	1	166
Dysentery	1	40	3	31	...	75
Unspecified fever	293	113	112	6	524
Syphilis	30	3	5	...	38
Puerperal fever	7	5	3	...	15
Other Septic diseases	66	7	19	...	92
Phthisis	4	335	50	57	8	454
Malaria	4	69	7	20	1	101
Beri-beri	22	2	6	...	30
Convulsions	1	60	31	14	...	106
Diseases of Circulatory System ...	2	5	144	14	33	1	199
Bronchitis	84	10	15	3	112
Pneumonia	3	139	23	56	1	222
Other Respiratory diseases	1	72	8	14	...	95
Enteritis	60	10	27	...	97
Diseases of Urinary System	3	37	6	8	..	54

Cause of death.			NUMBER CERTIFIED BY			
			Hospitals.	Private Doctors.	Deputy Registrar of Deaths.	Coroner.
Enteric fever	...	...	1	7	...	...
Diarrhoea	...	...	8	20	138	...
Dysentery	...	...	51	14	8	2
Enteritis	...	...	6	24	67	...
Unspecified fever	...	...	2	16	506	...
Malaria	...	...	58	39	2	2
Phthisis	...	...	140	84	223	7
Bronchitis	...	...	5	26	81	...
Pneumonia	...	...	34	43	142	3
Influenza	...	...	...	23	...	...
Remittent fever	...	...	...	4	...	...
Tetanus	...	...	6	7	26	...
Convulsions	...	...	5	19	82	...
Diseases of the Circulatory System	...	...	63	86	39	11
Old Age	...	...	10	13	251	...
Beri-beri	...	...	4	4	22	...

The total returns made by the Hospitals were 642, by private doctors 660, by the Deputy Registrar of Deaths 1814 and by the Coroner 67; that is roughly in the proportion of Hospitals and private doctors 2 each, and Deputy Registrar of Deaths 6.

Seasonal Mortality.

6. The deaths and death rate for each month are here recorded.

Table XIII.

Month		Deaths	Death rate per thousand	Month		Deaths	Death rate per thousand
January	...	309	28.36	July	...	291	26.71
February	...	256	26.00	August	...	214	19.64
March	...	312	28.64	September	...	223	21.14
April	...	271	25.69	October	...	247	22.67
May	...	260	23.86	November	...	247	23.41
June	...	293	27.77	December	...	260	23.86

Infectious Diseases.

7. Table XIV shows the incidence among the different nationalities of the principal infectious diseases which occurred during the year.

Table XIV.

1923 Infectious Diseases		Chicken-pox	Cerebro-Spinal Meningitis	Enteric fever	Tuberculosis	Influenza	Puerperal fever	Diphtheria	Measles	Whooping Cough	Erysipelas	TOTAL.
European	{ M	...	...	...	...	...	...	...	...	...	...	...
	{ F	4	...	...	...	...	...	...	...	...	...	4
Eurasian	{ M	7	1	...	2	...	...	...	...	...	...	10
	{ F	6	...	1	2	...	...	...	...	...	...	9
Chinese	{ M	3	2	8	266	9	...	3	3	2	...	296
	{ F	17	...	2	96	8	7	1	2	1	1	135
Malay	{ M	6	...	...	29	1	...	...	1	...	...	37
	{ F	1	...	1	29	1	7	...	...	...	...	39
Indian	{ M	61	1	...	45	2	...	...	2	...	...	111
	{ F	13	...	1	17	...	3	...	3	...	...	37
Other Nations	{ M	1	...	...	3	1	...	...	...	...	...	5
	{ F	2	...	...	4	1	...	...	...	...	...	7
Total	{ M	78	4	8	345	13	...	3	6	2	...	459
	{ F	43	...	5	148	10	17	1	5	1	1	231
Grand Total	...	121	4	13	493	23	17	4	11	3	1	690

Small-pox.

8. No case occurred within Municipal limits during the year.

Vaccination.

9. The system of infant vaccination remained the same as in 1922: most of the work is done by two senior Sub-Inspectors and the results were satisfactory.

4028 births were reported during the year.

Our staff did 2418 vaccinations, other public vaccinators did 568 and private practitioners 529, total primary vaccinations 3515.

626 infants died under age of one year of whom 510 were unvaccinated.

Arrangements were made with Assistant Protector of Chinese, Inspector of Schools and Head Masters to revaccinate scholars of all schools which had not been attended to in 1922: at the Chinese, Malay, Tamil and English schools some 4300 children were revaccinated.

In small-pox epidemic times parents usually could be persuaded to submit their children to vaccination: I am of opinion that our citizens are beginning to realize the protective value of vaccination against small-pox—at any rate opposition to the operation is very much less than in former years.

Enteric Fever.

10. 13 cases were notified.

10 were Chinese of whom 8 died.

The others were Eurasian, Malay and Indian—all three recovered.

Private practitioners reported 7 fatal cases and 5 recovered cases.

One case died at the General Hospital.

Cerebro-Spinal Meningitis.

11. 4 cases were notified.

2 Chinese males aged 51 and 56 died at the General Hospital.

1 Eurasian boy aged 6 died at home.

1 Indian, included in above 4 cases, was transferred to the Infectious Diseases Hospital, where he died with symptoms more of Tubercular Meningitis than of Cerebro-Spinal Meningitis.

Chicken-pox.

12. 121 cases were reported: there were no deaths.

This may be considered a trivial disease by some; though rarely fatal it is infectious and keeps people from work.

During the past ten years we have had 819 cases.

As pointed out in previous reports it is a disease to which Indians seem particularly susceptible.

Of the 819 cases mentioned, 531 were of Indian nationality and of these 444 were males.

There are about three times more males than females in our Indian population and Indians constitute only about one-sixth of our total population.

The majority of the cases occurred at age of 15 to 35: it is in Penang a disease of adults.

The Chinese had 20 cases only in 1923 and in population they outnumber the Indians more than four times.

Plague.

13. There was no case.

Puerperal Fever.

14. 17 cases were reported compared to 22 in 1922.

Chinese and Malay had 7 cases each and Indians had 3 cases.

Two Chinese patients recovered: all the other cases died.

This is regrettable: doubtless with some or better antenatal supervision, more care on the part of the medical attendant, midwife, "bidan" (unqualified midwife) and the patient, some of the cases could have been prevented and more of them cured.

Women suffering from this disease usually refuse to go to Hospital and generally decline to undergo effective treatment at their homes.

We have now 38 locally trained and qualified midwives: they are mostly Chinese.

Unfortunately the "bidans" (unqualified midwives) get much of the work: some years must elapse before they can be eliminated.

Sir George Newman is worth quoting: his remarks are particularly applicable to our local "bidans" and trained midwives.

"The trained **maternity nurse** is clearly an important factor and has opportunities of observation which she may neglect or turn to good account, but the untrained handy woman so often employed as "nurse" is an obvious source of danger not only because of what she may or may not do, but because the employment of an ignorant and often prejudiced woman at a time, when the mother is particularly receptive to wise or foolish counsel tends in itself to retard progress."

"**The mother** herself, however, with her instinctive desire to escape notice during pregnancy, her trust in family traditions and practices, and her frequent reliance upon ignorant advisers is perhaps the greatest obstacle to progress....."

In a town such as this, consisting of several nationalities, each with its particular traditions and practices, our obstacles are multiplied.

We are slowly making progress and educating our people in modern lines of sanitation and cleanliness, but it will take many years before new habits and traditions are created.

In my annual report of 1919, I dealt with the importance of teaching sanitation, systematically and practically, in our schools and urged that the course be made compulsory: girls become mothers and have the care and responsibility of children and the general supervision of a household laid upon them; when our girls are soundly educated in sanitation, we may hope for fewer preventible diseases and a healthier town.

We must recognise our serious responsibility and use every possible means to attain this desirable object.

Influenza.

15. Under Ordinance No. 157 (Quarantine and Prevention of Disease), this is classed as a dangerous infectious disease.

It was with us throughout the year being more general in early and late months.

It was not of severe type, but many persons were incommoded and off work.

23 persons were reported as having died of this disease: 17 were Chinese and the remaining 6 were distributed equally amongst Malays, Indians and others.

6 of the fatal cases occurred in March and April and 4 in December.

Diphtheria.

16. 4 cases were notified: all were Chinese: their ages were 3, 3, 4, and 5 years. 3 were admitted to General Hospital in an advanced stage of the disease: they died. The other child died at home.

Whooping Cough.

17. This is not notifiable as an infectious disease: at times it is fairly prevalent in Penang.

3 Chinese, aged 2 months, 1 year and 3 years were returned as having died at their homes from this disease.

Measles.

18. This infectious disease is not notifiable under Ordinance No. 157 (Quarantine and Prevention of Disease). Each year some cases come under our attention, but the disease has never assumed epidemic proportions.

The Chief Medical Officer of the Ministry of Health states that this disease remains (in England and Wales) one of our formidable enemies and considers it of such vital importance that he summarises ten practical measures to deal with it.

11 cases were brought to our notice.

5 were Chinese who all died: ages were 5 and 11 months and 1, 1, and 3 years.

The others were Indian 5 and Malay 1. These all recovered.

It is fortunate that we have had never a real epidemic of this disease: the mortality amongst the small number of cases we had this year is evidence that a large outbreak might easily prove a serious matter.

Tuberculosis.

19. It is a satisfactory to be able to record that the improvement noted last year appears to have been maintained; the deaths certified in 1923 as due to phthisis numbered 454 and those due to other tubercular disease 33, the total being 487. In 1922 there were 455 attributed to phthisis and a total of 486 to tuberculosis. In each year it is probable that a large number of deaths from phthisis were attributed to "unspecified fever" by the Deputy Registrar of Deaths owing to the meagre information available.

I mentioned in the 1922 report that the figures indicated a tuberculosis death rate of 3.86 per thousand of the population; in the preceding ten years the rate was about 5.76 per thousand.

The 1923 phthisis death rate of more than 3.5 per thousand is still far too high, and shows that we must persevere in our efforts to reduce overcrowding and to improve the standard of light and ventilation in dwelling houses, even if these efforts cause some financial worry to property owners.

There are still some areas in the town which are sadly lacking in amenity, and even in fresh air; unfortunately these are the areas where the population is densest.

We continued the routine practice of ordering the disinfection of all rooms where a death from phthisis was reported: our Staff also gave advice to the occupants of houses where cases of phthisis were known or suspected to exist,—an educational effort which should in time bear good fruit.

Anti-Mosquito Work.

20. Our gangs worked steadily through the year and with excellent effect in spite of much unfavourable weather.

The oiling gang as usual visited definite sectors of the town regularly once a week, and paid special attention to the ditches near Sepoy Lines and the Race Course.

The amount of oil used was, kerosine 1840 gallons and crude oil 10530 gallons, costing in all \$3,346.16. In 1922 the expenditure was, kerosine 1800 gallons, crude oil 507 gallons, total cost \$2,485.

There was a fair amount of valuable filling in of low-lying patches between Dato Kramat Road and the Sea, and both filling in and draining on the Golf course and Polo ground.

The banks of the Waterfall stream were again cleared from Municipal Limits down to Perak Road, and some work was done towards clearing and training Sungei Mati, a sluggish stream, in the lower part of its course.

In the North Beach area, by the cutting down of trees, the clearing and draining of ground, the removal of hovels and the closing of surface wells, much improvement has been effected towards checking the mosquito nuisance as well as in general sanitation.

I sometimes think that householders in general are showing more intelligence and care in looking after their houses and compounds, and I hope this is so. It is wonderful how much can be achieved by a trifling but general effort.

Theatres.

21. All the theatres and cinema halls were inspected once a week throughout the year, and their sanitary condition has improved.

It is satisfactory to be able to report that the work of converting the main floors from plank to concrete has now been completed. This is perhaps the most important item in the alterations which we asked for in 1922.

The actors' quarters and the sanitary conveniences are in much better condition than formerly, though still rather inadequate in some places.

We expect to secure still further improvements in 1924.

Markets.

22. The markets are under the administrative control of the Municipal Secretary, but we visit them frequently, and occasionally tender advice on matters of sanitary interest. The markets are still overcrowded though not so badly as formerly, and we may expect further improvement in this direction in 1924, when the coffee stalls are cleared out of all the markets.

Water Supply.

23. The supply was continuous but the Water Engineer informs me that at one period the supply was only just sufficient for the requirements of the town.

In a really dry year there is a possibility of shortage of water.

Part of the present catchment area is to be given up for hill development and a survey is being made along the north side of the island with a view to extending the water supply by tapping the larger streams.

We served 149 notices requiring the closure of wells and succeeded in getting 152 wells closed: during the last two years 383 wells have been closed.

These wells are shallow, often badly situated and always in danger of being contaminated.

When the proposed new water scheme is completed we expect to have a continuous supply of pure drinking water for every house within Municipal limits.

Medical Attendance.

24. Medical advice or treatment was given to Municipal employees 2,279 times.

The total for 1922 was 2,537 and for 1921 was 2,106.

The number seen per month varied from 292 in January to 128 in December.

The number seen in the different departments were:—Engineer 1,277, Health 195, Electrical 97, Fire Brigade 111, Jinrickshaw 63, Water 388, Secretariat 98 and Veterinary 50.

District Nursing.

25. The work was supervised by Miss J. Ronald and Miss C. M. Gold.

Eight locally qualified midwives were engaged as part time nurses.

The main part of the Town is divided into eight districts: to each district a midwife is allocated: each district nurse superintends the work in four districts.

The total number of visits and revisits made by the District Nurses and the eight midwives was over 40,000.

The Midwives Ordinance 1923 became applicable to Penang on 1st April 1923.

At end of the year 10 midwives were registered as class "A", 42 as class "B", and 12 as class "C".

Four of class "B" have left Penang.

Class "C" are the local "bidans"—unqualified midwives—who have been registered after being tested at the Maternity Hospital.

The chart at page 5 should be referred to here.

The District Nurses and the midwives are doing good work: as mentioned in paras 4 and 14; their usefulness is limited by local legislation, traditions and superstitions.

The educative work done by the qualified midwives must sooner or later give results: it is a pity that their services as midwives are not more in demand and that the "bidan" is favoured.

Till the "bidan" is excluded and our people have more appreciation of the value of cleanliness and skilled attendance there is little hope of further material reduction in our Infant Mortality.

136 babies died less than seven days old and 58 between the age of seven and fourteen days.

SALE OF FOOD & DRUGS ACT.

Milk.

26. Following the custom of previous years only such samples were bought for analysis as shewed by lactometer that they were below the normal specific gravity.

The Laboratory Assistant so tested some 5,000 samples during the year; in addition the Sanitary Inspectors tested over 300 samples.

Only 9 samples were bought as suspected of being adulterated : on analysis 7 were found to be adulterated with added water to extent of 6%, 7%, 7%, 20%, 28%, 34% and 72%.

These vendors were prosecuted and fines to the amount of \$450/- inflicted.

Three men were convicted of selling adulterated milk in the previous year; fines amounted to \$300/-

The heaviest fine was \$200/- and the total amount of fines for all offences was \$817/-.

Summonses have been served on 46 milk vendors and for 19 of these warrants for arrest are issued.

These vendors seem to have left the country: it is hoped they will change their occupation.

Ordinance No. 139 (Sale of Food & Drugs) makes a summons returnable only after fourteen days: as pointed out in previous years this gives a dishonest milk vendor ample time to settle his affairs and leave the district before the case against him is heard.

3 men were arrested for selling milk without a licence.

225 vendors were registered after medical examination: in 1922 the number was 250 and in 1921, 234.

Dairy Farm.

During the year a Dairy Farm of some 20 Frisian (Australian bred) cows was opened under Chinese management.

Cows were tested for tuberculosis before importation.

They are milked by machinery and the milk containers are sterilised.

The dairy and premises are kept clean and sanitary.

The herd is yet incomplete and the supply of milk limited.

Those interested in the question of fresh milk are advised to visit the dairy during the time of milking and bottling.

Infectious Diseases Hospital, Perak Road.

27. The reconstruction of the camp was well in hand by the end of the year: whilst work was going on most of the patients admitted were accommodated in the European and Eurasian Wards.

The drains, roads and electric lighting of the Hospital will be completed in 1924.

The Eurasian ward which is becoming dilapidated will be reconstructed.

There were 127 admissions, including 33 healthy contacts.

Tables XV and XVI shew their distribution according to disease and nationality.

Table XV.

		Remaining on 1.1.23	Admitted	Total	Discharged	Died	Remaining on 31-12-23
Chicken-pox	...	...	82	82	82	...	...
Measles	...	...	5	5	5	...	...
Cerebro-Spinal Meningitis	...	1	4	5	4	1	...
Sec. Syphilis	...	...	2	2	2	...	...
Drug Rash	...	...	1	1	1	...	...
TOTAL	...	1	94	95	94	1	...

Table XVI.

Nationality		Remaining on 1-1-23	Admitted	Total	Discharged	Died	Remaining on 31-12-23
Chinese	...	...	7	7	7	...	...
Malay	...	...	11	11	11	...	...
Indian	...	1	105	106	106	...	...
Sinhalese	...	...	1	1	...	1	...
Burmese	...	...	3	3	3	...	...
TOTAL	...	1	127	128	127	1	...

The Chinese Small-pox Hospital.

28. The construction of this Hospital was almost completed. It is intended for the treatment of cases of small-pox and the isolation of suspected cases, amongst the Chinese community.

It occupies a pleasant site at the junction of Batu Lanchang Road and Green Lane. The area extends to 8 acres and it is enclosed within a steel and corrugated iron fence, 10 feet high. The wards for cases of disease are enclosed within an inner barbed wire fence.

There are four wards for isolation of suspected cases, each ward designed for the accommodation of four persons.

For treatment of cases of Small-pox there is a main building with accommodation for 16 males and 8 females: two wards each for 4 persons and two wards for two persons.

Separate kitchens and bath rooms are adjacent.

There is also a dispensary which can be occupied by a resident doctor.

The buildings are of substantial construction, with brick and concrete piers, reinforced concrete floors, brick walls rendered in cement and timber and concrete tile roofs.

The sanitary arrangements are modern.

The water carriage system has been adopted and drains from the W.C.'s at the Dispensary and latrines (of which there are 7) discharge into a Septic Tank.

General Progress in Public Health.

29. A table has been prepared to present a quick view of the main facts in our vital statistics of the last twenty years.

The figures given are the simplest available. I may indicate certain factors unconnected with sanitation which influence the rates.

- (a) The proportion of females to males in the population has shown a steady tendency to increase, being now more than 3 to 5, whereas in 1904 it was approximately 3 to 9. There is therefore a certain natural increase in the birth rate.
- (b) This increase is further helped by the improvement which has taken place in the registration of births.
- (c) The infant mortality shown for the earlier years of the series is probably slightly higher than the true rate, owing to defective registration of births in those years.
- (d) Before the census of 1921, the population was greatly under-estimated. The death rates for some years before 1921 being calculated on a number smaller than the actual population is therefore higher than the actual death rate for those years.

In spite of these defects, the table undoubtedly shows that great improvement has taken place, and I may make the position clearer by one simple calculation.

The estimated population mid-1923 was 128,300.



The average crude death rate for the five years 1904-1908 was 41.14. At that rate in 1923 there would have been 5278 deaths, instead of the 3801 which actually occurred, i.e. there was a saving in one year alone of 1477 lives.

Table XVII.

Year.	Total number of		Birth. rate.	Crude Death rate.	Infant Mortality
	Births.	Deaths [Crude]			
1904	1335	3953	13.71	40.59	367
1905	1305	3949	13.26	40.13	379
1906	1253	4250	12.60	42.55	384
1907	1190	3776	11.84	37.59	467
1908	1519	4552	14.97	44.86	442
1909	1656	3923	16.15	38.25	337 (a)
1910	1905	3912	18.39	37.76	290
1911	2133	4045	21.02	39.88	287 (b)
1912	2421	3829	23.69	37.47	261
1913	2464	3794	23.95	36.86	284
1914	2545	3774	24.55	36.40	260
1915	2808	3390	26.89	32.46	239 (c)
1916	2708	3341	25.71	31.76	255
1917	3099	4071	29.25	38.42	269
1918	2940	4909	27.55	45.99	229
1919	3203	4466	28.86	41.54	244
1920	3321	4090	30.67	37.75	205
1921	3768	3775	30.56	30.61	167 (d)
1922	3738	3768	29.71	29.94	166
1923	4028	3801	31.39	29.62	155 (e)

Note.—(a) 1st January 1909—one District Nurse.

(b) 1st January 1911—two District Nurses.

(c) September 1915—Maternity Hospital opened.

(d) 1st December 1921—two whole time and seven part time District Nurses.

(e) 1st May 1923—two whole time and eight part time District Nurses.

Financial.

30. The total expenditure of the Health Department for 1923 was \$121,539.

This includes everything, the Quarantine Camp, the District Nurses' Scheme, Vaccination, Anti-Mosquito Work, all pay and allowances and the Commissioners' donations to the Provident Fund of our staff.

The total receipts amounted to \$14,112, leaving \$107,427 as the cost of the department to the ratepayers.

This represents a rate of 2.06%, or a little less than five pence in the pound sterling.

The population being 128,300 the total cost of the department for the year per head of population is about 84 cents or less than two shillings sterling.

Staff.

31. Mr. W. A. Ward, Chief Sanitary Inspector, was granted eight month's leave from 31st August.

Miss A. N. Laurie, District Nurse, resigned at the expiration of her leave on 26th July.

Miss J. A. G. Ronald, District Nurse, joined the service 9th January.

Miss C. M. Gold, District Nurse, joined the service 9th April.

Lim Khay Seng, S.S.I., joined the service 1st March.

Lo Siew Tean, S.S.I., joined the service 1st July.

Teoh Cheng Hoe, S.S.I., joined the service 1st December.

G. F. Scully, S.S.I., owing to ill-health resigned on 29th January.

A. Mathuray, S.S.I., owing to ill-health resigned on 9th June.

P. Preedy, S.S.I., owing to ill-health resigned on 28th October.

The staff worked well throughout the year.

I have the honour to be,

Gentlemen,

Your obedient servant,

J. STUART ROSE, M.B., D.P.H.,

Municipal Health Officer.

PENANG, 15TH FEBRUARY, 1924.

To,
THE MUNICIPAL HEALTH OFFICER,
PENANG.

SIR,

We have the honour to submit the report of the work done by the staff during the year ending 31st December 1923.

General Sanitation.

The staff made 27655 inspections and 27135 reinspections.

They found 956 defective and 2210 filthy houses.

5155 notices were issued of which 5171 (including 41 unserved and brought forward from 1922) were served: of these 5128 (including 335 outstanding on 31-12-22) have been complied with.

(Vide detailed list below).

Notices.	Outstanding on 31-12-22	Unserved on 31-12-22	Issued in 1923	Served in 1923	Unserved on 31-12-23	Complied	Work started	Cancelled	Carried forward 1924
Nuisance	148	8	359	358	4	321	59	13	172
Lime washing	11	11	524	533	2	515	22	...	29
Latrines	12	1	65	65	1	69	1	1	7
Drains	11	2	50	51	1	46	2	4	12
Filthy premises	1	2	670	671	1	670	...	...	2
Common Lodging House	23	1	828	829	...	831	6	14	7
Trades	3	...	416	416	...	418	...	1	...
Bakeries	6	...	857	857	...	859	...	4	...
By-Laws	2	...	30	29	1	20	3	1	10
Partitions	52	3	241	241	2	267	3	3	23
Mosquito Orders	36	7	304	307	4	334	5	...	9
Rats	4	1	10	11	...	13	...	...	2
Wells	25	4	149	150	3	114	36	4	57
Disinfection of infected house...	...	1	625	626	...	625	...	1	...
Closing Order	1	...	26	26	...	26	...	...	1
Ejectment Order	...	...	1	1	...	...	...	...	1
TOTAL	335	41	5155	5171	19	5128	137	46	332

46 notices were cancelled for various reasons.

321 Nuisance notices were complied with during the year dealing with 740 houses, of which 202 houses were structurally altered to provide light and ventilation, and land was set apart for back lanes or passages.

538 houses were repaired, i.e., floors, drains, roof and latrines put in order.

1 well was closed under a Nuisance notice.

7 marshy lands were filled in, and 182 other nuisances dealt with. In 59 cases work has been started.

12 permits were granted to erect latrines or to construct drains.

Wells.

149 notices under section 247 were served, and 114 were complied with ; 152 wells were closed. 3 Mandatory orders were obtained.

Cemeteries.

The Sub-Inspector in charge visited public cemeteries 88 times, and private ones 58 times.

Exhumations.

32 applications for exhumation of bodies were received, but only 24 bodies were exhumed under special licence.

Passengers.

113 passengers arrived from infected ports and passed through this office as against 339 last year.

Plans.

303 plans were sent in and examined in this office as against 294 last year.

Prosecutions.

427 summonses were issued during the year.

62 brought forward from 1922 (vide list A).

Total 489

387 convictions were obtained, including 3 milk sellers arrested for selling milk without licences.

32 withdrawn, including one case arrested (unlicensed milk-seller).

2 dismissed.

68 carried forward to 1924.

Total 489 (including 4 cases arrested).

60 Abatement of Nuisance, 4 Closing, 3 Prohibition and 19 Mandatory Orders were obtained.

The fines imposed by the District Judge amounted to \$3081.30 cents against \$5,224.50 cents last year.

Disinfections.

640 houses were disinfected during the year, for the following causes:—

Cerebro-spinal Meningitis	..	..	1
Leprosy	..	..	1
“Dyspepsia”	..	..	1
Typhoid	..	..	2
Diphtheria	..	..	3
Chicken-pox	..	..	26
Dysentery	..	..	32
Enteritis	..	..	68
Diarrhoea	..	..	141
Phthisis	..	..	365
Total			640

The houses disinfected being distributed as follows:—

Cerebro-spinal Meningitis.—Burmah Road (1).

Leprosy.—Burmah Road (1).

“Dyspepsia”.—Hutton Lane (1).

Typhoid.—Tek Soon Street and Stewart Lane (1 each).

Diphtheria.—Gladstone Road, Bridge Street and Soo Hong Lane (1 each).

Chicken-pox.—Patani Road and Penang Road (3 each), Macalister Road, China Street and Chulia Lane (2 each), Barrack Road, Church Street, Rope Walk, Queen Street, Penang Street, Half Way Road, Aboo Sittee Lane, Burmah Road, King Street, Tanjong Tokong Road, Bagan Jermal Road, Kajang Road, Merican Road and Kinta Lane (1 each).

Dysentery.—Jelutong Road (3), Cintra Street, King Street, West Jelutong, Malacca Street, Penang Road, and Armenian Street (2 each), York Road, Hong Kong Street, Ceylon Lane, Noordin Street Ghaut, Tye Sin Street, Chulia Street, Jahudi Road, Scotland Road, Burmah Road, Irving Road, Presgrave Street, Noordin Street, Malay Street, Hutton Lane, Perlis Road, Perak Road and Magazine Road (1 each).

Enteritis.—Chulia Lane, Chulia Street (7 each), Bridge Street and Hutton Lane (4 each), Dato Kramat Road, Aboo Sittee Lane, Rope Walk, Perak Road Jahudi Road, Kampong Java Bahru, Magazine Road, Lumut Lane, West Jelutong, Noordin Street, East Jelutong, and Jelutong Road (2 each), Kuala Kangsar Road, Armenian Street, Acheen Street, Market Lane, Singora Lane, Chin Ho Square, Macalister Road, Kampong Malabar, Patani Road, Penang Road, Western Road, China Street, Beach Street, Tamil Street, Green Lane, Chowrasta Road, Cannon Street, Green Hall, McNair Street, Cintra Street, Queen Street and Tye Sin Street (1 each).

Diarrhoea.—Chulia Street (12), Bridge Street and Magazine Road (8 each), West Jelutong and Muntri Street (6 each), Perak Road (5) Macalister Lane, Patani Road, Noordin Street, Jelutong Road and Kedah Road (4 each), East Jelutong, Hutton Lane, Beach Street, Kimberley Street, Love Lane and Pitt Street (3 each), Chulia Lane, Presgrave Street Ghaut, Caunter Hall, Dato Kramat Road, Argyll Road, Cintra Street, Campbell Street, Batu Lanchang Road, Green Lane, Madras Lane, Weld Quay, Maxwell Road, Queen Street and Seh Tan Court (2 each), Aier Etam Road, Kuantan Road, Penang Street, Gladstone Road, McNair Street, Stewart Lane, Transfer Road, Malacca Street, Tye Sin Street, Hong Kong Street, Kuala Kangsar Road, Carnarvon Street, Singora Lane, McCallum Street, Chowrasta Road, Sungei Pinang Road, Lorong Slamet, Selangor Road, Malay Street, Penang Road, Clarke Street, Rope Walk, Chulia Street Ghaut, Market Street Ghaut, Burmah Road, Kajang Road, Prangin Road Ghaut, Brick Kiln Road, Cannon Square and Macalister Road (1 each).

Phthisis.—Rope Walk (23), Chulia Street (18), West Jelutong (13), East Jelutong and Burmah Road (12 each), Dato Kramat Road (11), Perak Road and Campbell Street (10 each), Carnarvon Street (9), Hutton Lane, Penang Road and Argyll Road (8 each), Pahang Road, Magazine Road (7 each), Sungei Pinang Road, Macalister Road, Acheen Street and Transfer Road (6 each), Love Lane, Kuala Kangsar Road, Kimberley Street, Noordin Street, Beach Street and Perak Lane (5 each), Tamil Street, Gladstone Road, Siam Road, Prangin Road, Victoria Street, Irving Road and Muntri Street (4 each), Aier Etam Road, Jelutong Road, Madras Lane, Bishop Street, Malay Street, Patani Road, Kinta Lane, Bridge Street, Tek Soon Street, Cantonment Road, Cintra Street, Armenian Street, Maxwell Road, Green Lane and Presgrave Street (3 each), Western Road, Leith Street, Kampong Java Bahru, Church Street, Presgrave Street Ghaut, Cannon Square, Gottlieb Road, North Beach, China Street, Keng Kwee Street, Pitt Street, Brick Kiln Road, Batu Lanchang Road, Stewart Lane, Weld Quay, Penang Street, Mount Erskine Road, Scotland Road, Ceylon Lane, Northam Road and Kuantan Road, (2 each), Rangoon Road, Queen Street, Kedah Road, Naning Street, College Lane, Kampong Kolam, Cannon Street, Edgcumbe Road, Kajang Road, Cheapside, Duke Street, Chulia Lane, Kelawei Road, Bengal Lane, Aboo Sittee Lane, McNair Street, Soo Hong Lane, Chulia Street Ghaut, Prangin Road Ghaut, Prangin Road Ghaut, Argus Lane, Macalister Lane, Chowrasta Road, Bukit Dunbar, Klang Street, Malacca Street, Kampong Malabar, Prangin Lane, Carnarvon Lane, Jones Road, Half Way Road, Ariffin Court, Kek Chuan Road, Seang Tek Road, Dunlop Road, Hong Kong Street, Claimant Place, Waterfall Road, Larut Road, Jahudi Road and Anson Road (1 each).

Trades.

The fees collected during the year for trade licences amounted to \$8,079.40 against \$7,977.50 an increase of \$101.90 (vide attached list B).

Common Lodging Houses.

828 Common Lodging Houses were licensed during the year against 764 in 1922; the fees collected amounted \$1,498.30 as against \$1,389.40 an increase of 64 houses and increased fees amounting to \$108.90.

Lodging Houses under the Minor Offences Ordinance.

22 Lodging houses were licensed under the Minor Offences Ordinance against 20 in 1922.

Milk.

225 Milk sellers were registered in 1923 against 250 in 1922—a decrease of 25.

9 samples were sent for analysis of which 7 were found to be adulterated.

10 Summonses were issued (7 for selling milk adulterated with added water and 3 for offences against the By-laws).

48 Cases brought forward from 1922.

—
Total 58
—

13 convictions were obtained (including 2 men arrested for selling milk without licence).

1 case withdrawn (arrested by Police).

1 dismissed.

46 carried forward to 1924.

—
Total 61 including 3 cases arrested.
—

19 warrants were granted for the arrest of absentees but none were executed as the defendants in these cases on receipt of the summonses immediately absconded.

Fines amounting to \$817 were imposed against \$1,500 in 1922—a decrease of \$683.

The Sanitary Inspectors spent an afternoon each month in testing milk by lactometer from the various milk sellers whom they met in the different parts of the town.

Over 300 samples were tested during the year.

Vaccination.

Our vaccinators made 2076 primary and 4339 secondary vaccinations; these include the Government Girls' School, Anglo-Chinese Girls' School, Anglo-Tamil Boys' School, St. Xavier's Institution, Pulo Tikus and 69 Vernacular schools; 1590 tubes of lymph were used.

Anti-Mosquito Works.

The Anti-Mosquito gangs did good work, cutting down vegetation, digging, levelling and clearing ditches, collecting old tins, coconut shells and burying them at Dato Kramat, Waterfall, Ayer Rajah, Perak, Burmah, Gottlieb, Brown, Scott, Scotland, Macalister, Brick Kiln, Anson, Patani, Seang Tek, Siam, Trang, Barrack, Cantonment, Kelawei, Krian, Larut, Jahudi, Pahang, Sungei Pinang, York, Jelutong, East Jelutong, Batu Lanchang, Bell, Hogan, Adam and Barnett Roads, Ayer Itam behind Ayer Itam Road private market and Sungei Mati, Kinta, Singora, Green and Bagan Jermal Lanes, Lorong Slamet, Westlands and Babington Avenue; they also cleared the river banks from the Chetty's Temple to Perak Road Bridge and from Sungei Mati up to Batu Lanchang: before and after the Thaipusam they cleared up the ground in the vicinity of the Temple.

The Chokra gang under Sub-Inspector Peters went through the Town Area destroying and clearing up the breeding places of mosquitoes generally.

All ditches, pools and swamps within the Town Area and the Race Course were regularly sprayed with kerosene and crude oil once a week; 1840 gallons of kerosene and 10,530 gallons of crude oil were used: the cost was \$1,119.50 and \$2,226.66 respectively.

The gangs also cleared up private lands at the cost of the owners.

Staff.

Mr. W. A. Ward, Chief Sanitary Inspector, was granted eight months vacation leave from 31st August on proceeding to Europe.

S.S.I., Lim Khay Seng joined the service on 1st March.

S.S.I., Lo Siew Tean joined the service on 1st July.

S.S.I., Teoh Cheng Hoe joined the service on 1st December.

S.S.I., G. F. Scully, owing to ill-health resigned on 29th January.

S.S.I., A. Mathuray, owing to ill-health resigned on 9th June.

S.S.I., P. Preedy, owing to ill-health resigned on 28th October.

The staff worked satisfactorily throughout the year.

We have the honour to be,

Sir,

Your obedient servants,

A. A. JEREMIAH.

J. S. REUTENS.

H. L. McCULLOCH.

A

Prosecutions.	B. Forward from 1922	Issued in 1923.	Cases in Court.	Convictions.	Withdrawn.	Dismissed.	A. N. O.	C. O.	P. O.	M. O.	Total.	Fines.		Costs.	
												\$	cts.	\$	cts.
Nuisance ...	5	99	95	85	10	...	60	3	...	9	72	115	00	42	50
Nuisance Orders ...	6	14	17	14	3	...	...	1	3	...	4	138	30	7	00
Drains & Latrines ...	...	7	7	7	...	...	...	...	...	6	6	...	...	3	50
Trades ...	2	39	41	34	7	...	...	...	...	...	...	286	00	17	00
Common Lodging Houses ...	...	105	105	101	3	1	...	...	...	...	...	790	00	50	50
Breach of C. L. H. By-laws ...	...	12	12	8	4	...	...	...	...	...	...	75	00	4	00
Filthy premises ...	...	32	32	32	...	...	...	...	...	...	...	285	00	16	00
Sec. 160/161 ...	...	7	7	6	1	...	...	...	...	...	...	50	00	3	00
Bakery By-laws ...	...	56	51	49	2	...	...	...	...	...	...	416	00	24	50
Milk ...	48	14	*16	†14	‡1	1	...	...	...	...	...	818	00	40	50
Failing to Report Birth ...	...	17	15	15	...	...	...	...	...	...	...	15	00	7	50
Breach of Pig By-laws ...	...	4	4	4	...	...	...	...	...	...	...	33	00	2	00
Breach of Cattleshed By-laws ...	1	5	5	4	1	...	...	...	...	1	1	18	00	2	00
Lime Washing ...	...	7	7	7	...	...	...	...	...	...	...	22	00	3	50
Failing to Report Infectious diseases ...	...	1	1	1	...	...	...	...	...	...	...	10	00	...	50
Mosquitos ...	...	2	2	2	...	...	...	...	...	...	...	10	00	1	00
Closing Order ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ejecment Order ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Wells ...	...	4	4	4	...	...	...	...	...	3	3	...	...	2	00
Total ...	62	427	421	387	32	2	60	4	3	19	86	3,081	30	227	00

* Including 3 police cases arrested for selling milk without licence.

† „ 2 „ „ and convicted.

‡ „ 1 „ „ and withdrawn.

7
B

Trade Licenses 1923.	No. 1922.	Fees.		No. 1923.	Fees.		No. Increase.	Fees.		No. Increase.	Fees.	
		\$	cts.		\$	cts.		\$	cts.		\$	cts.
Coal Dépôt ...	1	12	00	2	24	00	1	12	00	...	...	45
Charcoal Dépôt ...	32	192	00	36	216	00	4	24	00	...	...	...
Candle Factory ...	16	128	00	16	128	00	...	...	...	...	...	...
Cattle Shed and Cattle	56	366	00	107	613	00	51	247	00	...	...	...
Wood Dépôt ...	75	450	00	76	456	00	1	6	00	...	...	...
Dyeing House ...	5	50	00	5	50	00	...	...	...	...	...	...
Fish Storing and Curing	37	444	00	43	516	00	6	72	00	...	..	...
Braziers, Foundries and Smithies ...	58	116	00	57	144	00	...	...	...	1	2	00
Pig Stys ...	55	110	00	56	112	00	1	2	00	...	...	...
Pig Stys (Free) ...	395	...	...	396	...	...	1	...	...	...	...	...
Pepper Washing Factory	2	20	00	2	20	...	...	...	...	...	...	...
Rags Bones and Feathers	4	48	00	5	60	00	1	12	00	...	...	...
Soap Factory ...	14	112	00	13	104	00	..	...	...	1	8	00
Stables and Horses	44	170	..	...	...	...	...	...	...	...	...	...
Sheep and Goats...	9	33	50	10	31	40	1	...	...	...	2	10
Tanneries ...	20	480	00	19	456	...	...	...	...	1	24	00
Blachan Factories	2	24	00	2	24	00	...	...	...	...	...	...
Bakeshops ...	26	180	00	40	200	00	4	20	00	...	...	...
Cookshops ...	201	1005	00	196	980	00	...	...	...	5	25	00
Eatingshops ...	654	3270	00	640	3200	00	...	...	...	14	70	00
Storing and Curing Hidès	5	60	00	5	60	00	...	...	...	...	...	...
Sago Factory ...	1	10	00	1	10	00	...	...	...	...	...	...
Attap, Kajang and Straw	33	99	00	45	135	00	12	36	00	...	...	...
Sugar Boiling ...	13	78	00	13	78	00	...	...	...	...	...	...
Market Gardens ...	42	...	...	31	...	...	...	...	...	11	...	...
Drying Cloth ...	2	10	00	2	10	00	...	...	...	...	...	...
Milk Sellers ...	250	250	00	225	225	00	...	...	...	25	25	00
Lodging Houses (Minor Offences Ordinance) ...	20	20	00	22	22	00	2	2	00	...	...	...
Fresh Fish and Meat	48	240	00	47	235	00	...	...	...	1	5	00
Total ...	2130	7977	50	2112	8079	40	85	433	00	59	161	10
Common Lodging Houses	764	1389	40	828	1498	30	64	108	90	...	...	...

